

MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

VOL. XXVIII.

MAY, 1900.

No. 5

INTRODUCTION.

The MONTHLY WEATHER REVIEW for May, 1900, is based on reports from about 3,101 stations furnished by employees and voluntary observers, classified as follows: regular stations of the Weather Bureau, 158; West Indian service stations, 12; special river stations, 132; special rainfall stations, 48; voluntary observers of the Weather Bureau, 2,562; Army post hospital reports, 22; United States Life-Saving Service, 9; Southern Pacific Railway Company, 96; Canadian Meteorological Service, 32; Mexican Telegraph Service, 20; Mexican voluntary stations, 7; Mexican Telegraph Company, 3. International simultaneous observations are received from a few stations and used, together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Hawaiian Government Survey, Honolulu; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Mr. Maxwell Hall, Government Meteorologist, Kingston, Jamaica; Capt. S. I. Kimball,

Superintendent of the United States Life-Saving Service; and Commander Chapman C. Todd, Hydrographer, United States Navy.

The REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is $157^{\circ} 30'$ or $10^{\text{h}} 30^{\text{m}}$ west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

The early part of the month was cool and dry from the upper Mississippi Valley over the Lake region, the Ohio Valley and the North Atlantic States; in the northern parts of the spring wheat district drought continued during the month. In Texas and California damage was caused by heavy rain. In the Middle Atlantic States rain on the 18th and 19th ended a drought that was becoming injurious to vegetation. These rains, and the period of warm weather which preceded them, were anticipated by the forecasts.

The severest gale of the month on the north Pacific coast occurred in the afternoon of the 23d. During this storm three fishermen were drowned and a number of fishing boats were lost at the mouth of the Columbia River. Timely warnings of the gale were issued by the Portland, Oreg., Weather Bureau Office the morning of the 23d.

From the 6th to the 9th an area of low barometer moved from Kansas to the New England coast, attended by severe local storms in Kansas and Nebraska on the 6th, and in areas from Texas to Indiana and Illinois on the 7th.

On the 3d general, and in many places, heavy frosts occurred in the western Lake region, and the Western and North-western States. On low ground in the fruit belt of Michigan, and also about Plainfield, Wis., strawberry buds were nipped by frost. On the 4th frost occurred in northern Tennessee, the Ohio Valley, and western and northern New York, with killing frost as far south as the Ohio River. Warn-

ings of these frosts were issued the morning of the 3d. On the 5th ice formed at many points in northern Ohio, and the occurrence of frost was general from the Lake region eastward, except on the immediate Atlantic coast. During the night of the 9th frost damaged early garden vegetables in southern New England. On the 10th frost caused heavy damage to fruits and berries in Wisconsin and northern Indiana. Regarding the frosts in New York, the Country World, of Jamestown, N. Y., remarks, editorially, as follows:

The value of the warnings sent out by the Weather Bureau were illustrated during the cold weather about the middle of May. Professor Moore, Chief of the Weather Bureau at Washington, telegraphed warnings to over 1,000 places in New York State, in addition to over 6,000 messages containing warnings mailed to different parts of the State for agricultural and other interests. In nearly every case these warnings were verified, and thousands of dollars saved to the people by timely preparation for the frosts.

CHICAGO FORECAST DISTRICT.

The month was marked by a continuation of the drought conditions over a portion of the Dakotas, Minnesota, and western Wisconsin, which form the northern part of the spring wheat district; but the few showers which afforded some relief were as a rule correctly forecast. The drought condition, and even the forecasts, under the circumstances